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Ari Pekkarinen

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WARE FRESSOLA VAN DER SLUYS & ADOLPHSON, LLP
BRADFORD GREEN, BUILDING 5
755 MAIN STREET, P O BOX 224
MONROE, CT 06468

EXAMINER

YEUNG LOPEZ, FEIFEI

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/582,833	Applicant(s) PEKKARINEN ET AL.	
	Examiner FEI FEI YEUNG LOPEZ	Art Unit 2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicants argue on page one of the remark section that Hong does not teach the claimed invention since the "at least one outlet" (layer 106 in fig 4) does not "constantly" connect the electroconductive metal element" (layer 105) "to ground...." "Constantly connect," according to Applicants, means that conduction of current in the at least one outlet does not require "voltage more than the specific voltage" applied on the at least one outlet, the condition in Hong's device, or that the electrostatic charge be more than "barrier potential established by the Mylar faceplate," as disclosed by Sherwood. Applicants pointed to figures 1-3, page 6, lines 1-6, page 7, lines 7-12, and page 8, lines 22-26 for support. Firstly, Applicants never use the word "constantly," its variances, or its synonyms. Secondly, Applicants' device also requires a certain amount of minimum voltage or current for the electroconductive element to conduct current to ground. As seen in figure 1 of Applicants' drawing, layers 104 and 105 are

Art Unit: 2826

made of different materials (same goes for layers 204 and 205 in fig. 2 and 304 and 305 in fig. 3.) When static current goes from epoxy box 104 to metal electroconductive element 105 the interface creates a potential barrier caused by different work functions of the two materials (see Neamen, pages 308-310. In the example provided by Neamen, the work function difference is between metal and semiconductor, in the current case it's between insulator and metal.) As a result, current must overcome the barrier potential similar to that shown in equation 8.2 of Neamen.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It's not clear what Applicants mean by "constantly connect the electroconductive metal element to ground." If Applicant mean that there is always a physical wiring connecting the electroconductive metal element to ground through the at least one outlet, then Hong, Sherwood, and Wu references disclose the feature since the physical wirings (from 105 to 106 to ground in fig. 4 of Hong; from 75 through 65,63,63',24, and 14 to ground, column 4, lines 59-65 of Sherwood; from guard ring to ground, see column 7, lines 61-65 of Wu) in all three reference are not disconnected under any circumstances. If by "constantly connect the electroconductive metal element to

Art Unit: 2826

ground” Applicants mean there is a constant current flows from the electroconductive metal element to ground, then this is unclear from Applicants’ disclosure where and how this constant electrostatic current comes about.

Claim Rejections - 35 USC § 102

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 4, 5, 8, 11, 12, 15, 16, 19, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hong et al (US Patent 5,889,308).

4. Regarding claim 1, Hong teaches a semiconductor component, comprising a semiconductor element (layer 102 in fig. 4) encased by a cover element (element a) having an integrated electroconductive metal element (layer 105) comprising at least one outlet, wherein the at least one outlet is configured to *constantly* connect the electroconductive metal element to ground in order to shield the semiconductor element against electrostatic pulses (column 4, lines 43-57).

5. Regarding claim 4, Hong teaches a semiconductor component according to claim 1, wherein the electroconductive metal element forms a permanent, integrated part of the semiconductor component (see fig. 4).

6. Regarding claim 5, Hong teaches a semiconductor component according to claim 4 claim 1, wherein the electroconductive metal element (layer 105) is placed underneath the cover element of the semiconductor component, inside said cover element (element a in fig. 4).

Art Unit: 2826

7. Regarding claim 8, Hong teaches a method for shielding a semiconductor element against electrostatic pulses, comprising: integrating the semiconductor element in a semiconductor component (layer 102 in fig. 4), covering the semiconductor element with a cover element (element a), integrating an electroconductive metal element (layer 105) within the cover element of the semiconductor component and providing at least one outlet for the integrated electroconductive metal element, so that the at least one outlet is configured to *constantly* connect the electroconductive metal element to ground (column 4, lines 43-57).

8. Regarding claim 11, Hong teaches a method according to claim 8, wherein the electroconductive metal element is integrated as a permanent part of the semiconductor component (see fig. 4).

9. Regarding claim 12, Hong teaches a method according to claim 11, wherein the electroconductive metal element is integrated underneath the cover element of the semiconductor component, inside said cover element (see fig. 4).

10. Regarding claim 15, Hong teaches an arrangement including a mounting tray and at least one semiconductor component, wherein said at least one semiconductor component comprises a semiconductor element (layer 102 in fig. 4) encased by a cover element (layer a) having an integrated electroconductive metal element (layer 105), where the electroconductive metal element is provided with at least one outlet that is *constantly* grounded to a ground plane of the mounting tray (column 4, lines 43-57).

11. Regarding claim 16, Hong teaches apparatus for shielding a semiconductor element against electrostatic pulses, comprising: means for covering (layer a in fig. 4)

Art Unit: 2826

the semiconductor element in a semiconductor component (layer 102) having an integrated electroconductive metal element (layer 105); and means for providing at least one outlet for the integrated electroconductive metal element, so that the at least one outlet is configured to connect the electroconductive metal element to ground (column 4, lines 43-57).

12. Regarding claim 19, Hong teaches the apparatus of claim 16, wherein the electroconductive metal element is integrated as a permanent part of the semiconductor component (see fig. 4).

13. Regarding claim 20, Hong teaches the apparatus of claim 16, wherein the electroconductive metal element is integrated underneath the cover element of means for covering the semiconductor component, inside said cover element (see fig. 4).

14. Claims 1, 2, 4-9, 11-14, 16, 17, 19, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Sherwood et al (US Patent 4,303,960).

15. Regarding claim 1, Sherwood teaches a semiconductor component, comprising a semiconductor element (MOS in layer 103 in fig. 3) encased by a cover element (encased by layer 22 in fig. 1 and the substrate the MOS is formed) having an integrated electroconductive metal element (layer 75) comprising at least one outlet, wherein the at least one outlet is configured to connect the electroconductive metal element to ground in order to shield the semiconductor element against electrostatic pulses (column 4, lines 59-65).

Art Unit: 2826

16. Regarding claim 2, Sherwood teaches a semiconductor component according to claim 1, wherein in structure, the electroconductive metal element is a planar sheet (column 3, lines 43-46).

17. Regarding claim 4, Sherwood teaches a semiconductor component according to claim 1, wherein the electroconductive metal element forms a permanent, integrated part of the semiconductor component (see fig. 1).

18. Regarding claim 5, Sherwood teaches a semiconductor component according to claim 4 claim 1, wherein the electroconductive metal element (layer 75 in figs 1 and 3) is placed underneath the cover element (when "the cover element" in claim 1 is interpreted as to be formed by layers 21 and 22) of the semiconductor component, inside said cover element.

19. Regarding claim 6, Sherwood teaches a semiconductor component according to claim 1, wherein the electroconductive metal element (layer 75 in fig. 3) is placed on top of attached to the cover element of the semiconductor component, outside said cover element (layer 75 is outside of "the cover element" formed by layer 22 and the substrate the MOS is formed (layer 103)).

20. Regarding claim 7, Sherwood teaches a semiconductor component according to claim 1, wherein the electroconductive metal element is induced in the cover element of the semiconductor component either chemically or electrochemically (column 3, lines 43-52, where Sherwood teaches using glue to bond layer 75 to the device. The bonding force of the glue is generated by molecular force of the glue—thus, induced chemically). Also, how the electroconductive metal element is formed, whether

Art Unit: 2826

chemically, electrochemically, or other process, does not carry patentable weight in a device claim. “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113.

21. Regarding claim 8, Sherwood teaches a method for shielding a semiconductor element against electrostatic pulses, comprising: integrating the semiconductor element in a semiconductor component (MOS in layer 103, see fig. 3), covering the semiconductor element with a cover element (cover element formed by layers 22 and layer 103), integrating an electroconductive metal element (layer 75 in figs. 1 and 3) within the cover element of the semiconductor component and providing at least one outlet for the integrated electroconductive metal element, so that the at least one outlet is configured to connect the electroconductive metal element to ground (column 4, lines 59-65).

22. Regarding claim 9, Sherwood teaches a method according to claim 8, wherein in the semiconductor component, there is integrated an electroconductive, planar metal element (layer 75 in fig. 3).

Art Unit: 2826

23. Regarding claim 11, Sherwood teaches a method according to claim 8, wherein the electroconductive metal element (layer 75 see figs. 1 and 3) is integrated as a permanent part of the semiconductor component.

24. Regarding claim 12, Sherwood teaches a method according to claim 11, wherein the electroconductive metal element (layer 75 in figs. 1 and 3) is integrated underneath the cover element (when the cover element is formed by layers 21 and 22 in fig. 1) of the semiconductor component, inside said cover element.

25. Regarding claim 13, Sherwood teaches a method according to claim 11, wherein the electroconductive metal element (layer 75 in fig. 3) is integrated on top of by attachment to the cover element of the semiconductor component, outside said cover element (layer 75 is outside of the cover element formed by layer 22 and layer 103 in fig. 3).

26. Regarding claim 14, Sherwood teaches a method according to claim 8, wherein the electroconductive element is induced in the cover element of the semiconductor component either chemically or electrochemically (column 3, lines 43-52, where Sherwood teaches using glue to bond layer 75 to the device. The bonding force of the glue is generated by molecular force of the glue—thus, induced chemically).

27. Regarding claim 16, Sherwood teaches apparatus for shielding a semiconductor element against electrostatic pulses, comprising: means for covering (layers 21 and 22) the semiconductor element in a semiconductor component (MOS on layer 103) having an integrated electroconductive metal element (layer 75 in fig. 3); and for providing at least one outlet for the integrated electroconductive metal element, so that the at least

Art Unit: 2826

one outlet is configured to connect the electroconductive metal element to ground (column 4, lines 59-65).

28. Regarding claim 17, Sherwood teaches the apparatus of claim 16, wherein in the semiconductor component, there is integrated an electroconductive, planar metal element (layer 75 in fig. 3).

29. Regarding claim 19, Sherwood teaches the apparatus of claim 16, wherein the electroconductive metal element (layer 75 in figs. 1 and 3) is integrated as a permanent part of the semiconductor component.

30. Regarding claim 20, Sherwood teaches the apparatus of claim 16, wherein the electroconductive metal element (layer 75 in figs. 1 and 3) is integrated underneath the cover element of means for covering the semiconductor component, inside said cover element.

31. Claims 1, 3, 8, 10, 16 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Wu et al (US Patent 6,175,394 B1).

32. Regarding claim 1, Wu teaches a semiconductor component, comprising a semiconductor element (layer 20 in fig. 1) encased by a cover element (cover of the display panel) having an integrated electroconductive metal element (layer 24, see column 2, lines 28-30) comprising at least one outlet, wherein the at least one outlet is configured to connect the electroconductive metal element to ground (column 7, lines 6-65) in order to shield the semiconductor element against electrostatic pulses.

Art Unit: 2826

33. Regarding claim 3, Wu teaches a semiconductor component according to claim 1, wherein the electroconductive metal element is a thin loop structure (see fig. 1).

34. Regarding claim 8, Wu teaches a method for shielding a semiconductor element against electrostatic pulses, comprising: integrating the semiconductor element (layer 20 in fig. 1) in a semiconductor component, covering the semiconductor element with a cover element (cover of the display panel), integrating an electroconductive metal element (layer 24 in fig. 1) within the cover element of the semiconductor component and providing at least one outlet for the integrated electroconductive metal element, so that the at least one outlet is configured to connect the electroconductive metal element to ground (column 7, lines 61-65).

35. Regarding claim 10, Wu teaches a method according to claim 8, wherein in the semiconductor component, there is integrated an electroconductive, loop-shaped metal element (layer 24 in fig. 1).

36. Regarding claim 16, Wu teaches apparatus for shielding a semiconductor element against electrostatic pulses, comprising: means for covering the semiconductor element in a semiconductor component (layer 20 in fig. 1) having an integrated electroconductive metal element (layer 24); and means for providing at least one outlet for the integrated electroconductive metal element, so that the at least one outlet is configured to connect the electroconductive metal element to ground (column 7, lines 61-65).

Art Unit: 2826

37. Regarding claim 18, Wu teaches the apparatus of claim 16, wherein in the semiconductor component, there is integrated an electroconductive, loop-shaped metal element (layer 24 in fig. 1).

Response to Arguments

38. Applicant's arguments filed on October 1, 2009 have been fully considered but they are not persuasive.

Hong, Sherwood, and Wu teach the claimed device disclosed in the description as originally filed. Applicants' at least one outlet connects the electroconductive metal element to ground under certain conduction only, so do Hong's, Sherwood's, and Wu's devices. (Also see rejections under 112 first and second paragraphs above.)

Conclusion

39. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 2826

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FEI FEI YEUNG LOPEZ whose telephone number is (571)270-1882. The examiner can normally be reached on 7:30am-5:00pm Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on 571-272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Feifei Yeung-Lopez/
Examiner, Art Unit 2826

/Minh-Loan T. Tran/
Primary Examiner
Art Unit 2826

Application/Control Number: 10/582,833
Art Unit: 2826

Page 14